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# Principles and Practice of Constraint Programming – CP 2009

15th International Conference, CP 2009  
Lisbon, Portugal, September 20-24, 2009  
Proceedings

## Volume Editor

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# Preface

This volume contains the papers presented at CP 2009: The 15th International Conference on Principles and Practice of Constraint Programming. It was held from September 20–24, 2009 at the Rectory of the New University of Lisbon, Portugal. Everyone involved with the conference thanks our sponsors for their support.

There were 128 submissions to the research track, of which 53 were accepted for a rate of 41.4%. Each submission was reviewed by three reviewers, with a small number of additional reviews obtained in exceptional cases. Each review was either by a Programme Committee member, or by a colleague invited to help by a committee member thanks to their particular expertise. Papers submitted as long papers were accepted at full length or not at all. It is important to note that papers submitted as short papers were held to the same high standards of quality as long papers. There is thus no distinction in these proceedings between long and short papers, except of course the number of pages they occupy. As it happens, the acceptance rates of short and long papers were very similar indeed.

There were 13 submissions to the application track, of which 8 were accepted, for a rate of 61.5%. Papers underwent the same review process as regular papers, and there was not a separate committee for reviewing application track papers. However, papers in the application track were not required to be original or novel research, but to be original and novel as an application of constraints.

The programme included three invited talks from distinguished scientists, Carla Gomes, Philippe Baptiste, and Barbara Smith. They have each provided a brief abstract of their talk. Additionally, three tutorials were given during the main programme. Affiliated workshops were held on September 20, 2009. Details of tutorials and workshops are given on a separate page.

To help with the review process and constructing the proceedings, I used the EasyChair conference management system. On another issue of process, while I did not submit any papers myself to the conference, a number of colleagues from St Andrews University did. I thank Fahiem Bacchus for overseeing these papers, assigning PC members and making final decisions on them.

I would like to thank the Association for Constraint Programming for inviting me to be Programme Chair of this conference. A conference proceedings such as this is the work of literally hundreds of people, including authors, Programme Committee, local organizers, tutorial and workshop chairs, the doctoral programme chairs, and additional reviewers. I would like to thank all of them for their hard work, especially remembering those authors of papers which were rejected.

Apart from all those who have played some formal role, many people have provided special help with a lot of the day-to-day, and often dull, tasks that arise while preparing the proceedings. For this, I would especially like to thank

Chris Jefferson, Lars Kotthoff, Angela Miguel, Ian Miguel, Neil Moore, Peter Nightingale, Karen Petrie, Andrea Rendl, and Judith Underwood.

July 2009

Ian Gent

# Prize-Winning Papers

A small number of colleagues from the Programme Committee helped me decide on the papers deserving of being recognized as of the highest standard of those submitted. As well as prizes, a small number of other papers were designated as runners-up.

– Ian Gent

## Best Paper (Application Track)

*A Hybrid Constraint Model for the Routing and Wavelength Assignment Problem*, by Helmut Simonis

## Best Paper (Research Track)

*Edge Finding Filtering Algorithm for Discrete Cumulative Resources in  $O(kn \log n)$* , by Petr Vilím

### **Runners-Up** (in alphabetical order)

- *Conflict Resolution*, by Konstantin Korovin, Nestan Tsiskaridze, Andrei Voronkov
- *Failed Value Consistencies for Constraint Satisfaction*, by Christophe Lecoutre, Olivier Roussel
- *On the Power of Clause-Learning SAT Solvers with Restarts*, by Knot Pipatsrisawat, Adnan Darwiche

## Best Student Paper<sup>1</sup>

*On the Power of Clause-Learning SAT Solvers with Restarts*, by Knot Pipatsrisawat, Adnan Darwiche

### **Runner-Up**

- *Using Relaxations in Maximum Density Still Life*, by Geoffrey Chu, Peter Stuckey, Maria Garcia de la Banda

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<sup>1</sup> Student papers were those papers declared by the authors to be mainly the work (both in research and writing) of PhD or other students.

# Workshops and Tutorials

## Workshops

A range of workshops affiliated with the conference took place the day before the main conference, on September 20, 2009. The workshops accepted by the Workshop Chairs were as follows:

- Bin Packing and Placement Constraint (BPPC 2009)
- Local Search Techniques in Constraint Satisfaction (LSCS 2009)
- Mathematical Foundations of Constraint Programming
- Constraint Modelling and Reformulation (ModRef 2009)
- Symmetry and Constraint Satisfaction Problems (SymCon 2009)
- Interval Analysis and Constraint Propagation for Applications (IntCP 2009)
- Constraint-Based Methods for Bioinformatics (WCB 2009)
- Constraint Reasoning and Optimization for Computational Sustainability (CROCS 2009)

## Tutorials

Three tutorial presentations were given during the main programme of the conference. These were as follows:

- *Amortized and Expected Case Analysis of Constraint Propagation Algorithms*, by Chris Jefferson, Meinolf Sellmann
- *Soft Global Constraints*, by Willem-Jan van Hoeve
- *Exploiting Fixed-Parameter Tractability in Satisfiability and Constraint Satisfaction*, by Barry O’Sullivan and Igor Razgon

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ACP - Association for Constraint Programming  
NICTA - National Information and Communications Technology Australia  
FCT - Foundation for Science and Technology  
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Widescope: Optimization Solutions

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The Association for Constraint Programming aims at promoting constraint programming in every aspect of the scientific world, by encouraging its theoretical and practical developments, its teaching in academic institutions, its adoption in the industrial world, and its use in application fields.

The ACP is a non-profit association, which uses the profit of the organized events to support future events or activities. At any given time, members of the ACP are all attendees of a CP conference in the past five years, and all members of the Programme Committee of the current CP conference.

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